

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 (currently amended). A digital reception apparatus, comprising:

a receiver that performs reception processing on a received signal, the receiver including a quadrature demodulator that performs a quadrature demodulation processing operation on the processed received signal to output an in-phase signal and a quadrature signal; and

a distortion corrector that corrects a non-linear distortion of the processed received signal, the distortion corrector comprising a distortion estimator ~~that estimates the distortion and outputs a correcting signal based on an inverse distortion characteristic of the receiver, and [[a]] plural distortion compensator that multiplies the received signal and the correcting signal to remove the non-linear distortion from the received signal~~ compensators, the in-phase signal and the quadrature signal being input to the distortion estimator and a respective distortion compensator of the plural distortion compensators, the distortion estimator estimating a distortion component in the processed received signal to generate a correcting signal that is indicative of an inverse characteristic of the processed received signal, the correcting signal being utilized by the plural

distortion compensators to remove the non-linear distortion from the in-phase signal and the quadrature signal.

2 (canceled).

3 (currently amended). The digital reception apparatus according to claim 1, wherein the receiver comprises a filter calculator that performs a filter calculation to limit a frequency band of the processed received signal.

4 (currently amended). The digital reception apparatus according to claim 1, wherein the receiver comprises an adjuster that adjusts an amplitude of the received signal, based on an amplitude of a signal necessary for demodulation contained in the processed received signal.

5-7 (canceled).

8 (previously presented). The digital reception apparatus according to claim 13, wherein the distortion corrector corrects the non-linear distortion using at least a quantization characteristic of the quantizer.

9 (currently amended). The digital reception apparatus according to claim 8, the distortion converter further comprising:

a filter calculator that performs a filter calculation on the received signal that has been converted into a non-linear signal by the quantizer.

10 (currently amended). The digital reception apparatus according to claim 8, the distortion converter further comprising:

a calculator that performs an arithmetical calculation on the received signal that has been converted into a non-linear signal by the quantizer.

11 (currently amended). The digital reception apparatus according to claim 13, wherein the distortion corrector comprises a signal processor that performs digital signal processing on the received signal that has been converted into a non-linear signal by the quantizer, the signal processor converting the non-linear signal into a signal represented by a code system ~~based on~~ related to at least one characteristic of the received signal.

12 (currently amended). The digital reception apparatus according to claim 11, wherein the receiver performs the reception processing on the received signal based on a control signal contained in a ~~[[the]]~~ demodulated linear signal.

13 (currently amended). A digital reception apparatus, comprising:

a receiver that performs reception processing on a received signal, the receiver comprising a non-linear quantizer that converts the received signal to a non-linear quantized signal;

a distortion converter that converts the non-linear quantized signal to a linear signal for demodulation, the distortion converter comprising a ~~distortion corrector that corrects a non-linear distortion introduced by at least the non-linear quantizer~~ linear compensator, the non-linear quantized signal being input to the linear compensator which determines a correcting signal that is indicative of an inverse characteristic of the non-linear quantized signal, the correcting signal being utilized by the linear compensator to convert the non-linear quantized signal to the linear signal.

14 (currently amended). The digital reception apparatus according to claim 13, wherein ~~the distortion corrector comprises a distortion estimator that estimates the distortion and outputs a correcting signal based on an inverse distortion characteristic of the receiver, and the distortion corrector comprises~~ a distortion compensator that multiplies the received signal and the correcting signal to remove the non-linear distortion from the received signal.

15 (currently amended). The digital reception apparatus according to claim 11, wherein the code ~~system~~ comprises codes based on a logarithm representation of the digital signal processing.

16 (currently amended). The digital reception apparatus according to claim 11, wherein the code ~~system~~ comprises linear codes.

17 (previously presented). The digital reception apparatus according to claim 13, wherein the received signal on which the reception processing is performed comprises an instantaneous signal.

18 (currently amended). The digital reception apparatus according to claim 1, wherein the processed received signal on which the reception processing is performed comprises an instantaneous signal.

19 (currently amended). A method for receiving a digital signal, comprising:

initially processing a received signal to produce an in-phase signal and a quadrature signal;

estimating a non-linear distortion of the processed received signal introduced by the initial processing;

generating a correcting signal that is indicative of ~~based on~~ an inverse distortion characteristic of the initial processing;

multiplying the ~~processed received signal and the~~ correcting signal with each respective in-phase signal and quadrature signal to remove the non-linear distortion from the ~~processed received signal~~ in-phase signal and the quadrature signal;

demodulating the multiplied ~~received signal~~ in-phase signal and the quadrature signal.

20 (previously presented). The method for receiving the digital signal according to claim 19, wherein the initial processing comprises at least one of amplifying, quantizing and quadrature demodulating the received signal.